



**INTERNATIONAL MINERALOGICAL ASSOCIATION
COMMISSION ON NEW MINERALS, NOMENCLATURE
AND CLASSIFICATION**

Chairman: Ferdinando Bosi
Department of Earth Sciences
Sapienza University of Rome
Piazzale Aldo Moro 5, I-00185, Roma, Italy

Phone: +39 0649914901
E-mail: ferdinando.bosi@uniroma1.it

3 June, 2024

Dear Cristian Biagioni,

Congratulations on your new mineral, 2024-010_NANNONIITE!

The attached summary will appear in my next memorandum to the members of the Commission on New Minerals, Nomenclature and Classification (CNMNC). You should consider the comments of the members when you write your final description.

Although the Commission has no strict rule dealing with publication, I would ask that you ensure that the first published record of your mineral is in the scientific literature. The CNMNC has decided to announce new minerals (with or without their name, depending upon the authors' wishes) with some data on the CNMNC website, one month after their approval. The text that will appear is attached below.

One of the rules of our Commission is that the description of a new mineral must be published within **two years** of notification of the approval. If publication does not take place during that time, approval of the mineral and its name will be withdrawn.

Proof of receipt of the type specimen(s) by the curator of the collection in which the type specimen(s) have been deposited must be sent to me as soon as possible to ensure approval. The Commission strongly disapproves of the practice of providing specimens of new species to mineral dealers prior to the full description of the new species being published in the scientific literature.

You must be sent a copy of this letter with the manuscript of your description when you submit the paper for publication. This will indicate to the editor of the journal that the mineral and its name have been approved by the CNMNC of the International Mineralogical Association as well as the comments of the CNMNC members.

Please send a reprint of the description to me when it is published.

Best regards,

Chairman CNMNC

Encl.



**Monthly announcement of new minerals on the CNMNC website and in the
Mineralogical Magazine and the *European Journal of Mineralogy*
with or without their name, with a limited number of data.**

The Commission on New Minerals, Nomenclature and Classification decided in January 2010 (Proposal 09-D: the early publication of new mineral names) that additional data would be published one month after the approval date on the CNMNC website. This data will also be published in the *Mineralogical Magazine* and in the *European Journal of Mineralogy*, under the heading of a CNMNC Newsletter.

For your newly approved mineral, the following data will be published in line with the above, unless you wish the mineral name to remain confidential until the full description is published. If this is the case, the name will be removed from the data listed below. **NOTIFY ME BY E-MAIL IF YOU DO NOT WISH TO HAVE THE NAME OF YOUR MINERAL RELEASED PRIOR TO PUBLICATION.**

IMA No. 2024-010

Nannoniite

$\text{Al}_2(\text{OH})_5\text{F}$

Symbol

Cetine di Cotorniano mine, Chiusdino, Siena, Tuscany, Italy (43°13' N, 11°09' E)

Cristian Biagioni*, Enrico Mugnaioli, Sofia Lorenzon, Daniela Mauro, Silvia Musetti, Jiří Sejkora, Donato Belmonte, Nicola Demitri and Zdeněk Dolníček

*E-mail: cristian.biagioni@unipi.it

Closely related to gibbsite

Monoclinic: $P2_1/n$; structure determined

$a = 8.688(3)$, $b = 5.024(2)$, $c = 9.734(4)$ Å, $\beta = 90.77(2)^\circ$

4.86(vs), 4.35(s), 3.241(m), 2.427(ms), 2.223 (mw), 1.981(m), 1.742(mw), 1.447(m)

Type material is deposited in the collections of the Museo di Storia Naturale, Università di Pisa, Via Roma 79, Calci (PI), Italy, catalogue numbers 20071 (holotype) and 20072 (cotype)

How to cite: Biagioni, C., Mugnaioli, E., Lorenzon, S., Mauro, D., Musetti, S., Sejkora, J., Belmonte, D., Demitri, N. and Dolníček, Z. (2024) Nannoniite, IMA 2024-010.

CNMNC Newsletter 80, Eur. J. Mineral., 36, <https://doi.org/.....>



2024-010
NANNONIITE

	Yes	No	Abstain
Mineral	21		
Name	21		

Consequently, both the mineral and name have been **approved**.

COMMENTS ON THE MINERAL:

Those who voted **YES** made the following comments:

1. Description OK.
2. In the empirical formula SO_4 appears by mistake.
3. Name: after late expert on the mineralogy of Tuscany.
Occurrence/Paragenesis: spherulites with quartz, baryte and alunite on silicified limestone in an Sb deposit where F-rich fluids have produced several unusual fluoride minerals.
Chemical Analysis/Formula: OK, including H content calculated from structure and charge balance.
Physical Properties: OK.
Optical Properties: Only mean RI estimate from Gladstone-Dale relationship is provided.
XRD data/Crystal Structure: OK. Homeotype of the layered gibbsite structure, but with 1/6 of the $(\text{OH})^-$ replaced by F^- in an ordered fashion. However, there appears to be an issue with Al-F bond lengths in the site that otherwise appears to favour F. F distribution within layer in Fig. 4a appears to be wrong; Fig. 5a is correct, but what is the significance of the 'A' and 'B' labels?
Other data: Raman spectrum provided.
Type material location: OK.
Relationship to other minerals: Al hydroxide-fluoride closely related to gibbsite.
4. Without measures of optical properties but with enough information to define a new mineral. The content in SO_4 in the empirical formula is a mistake?
5. On the overall the structure, including hydrogen atoms positions, looks reasonable. The bond-valence contribution of the hydrogen bonds could be tested also using the relations published by Ferraris & Ivaldi (1988), Acta Cryst., B44, 341–344.
6. Valuable Authors' Remarks.
7. check the empirical formula!
8. The empirical formula of the mineral is incorrect ($\text{SO}_4?$).
9. Check the empirical formula. $(\text{SO}_4)_{1.01}$ seems to be too much considering the reported analytical data.
10. **RELATION TO OTHER SPECIES:** May be the same mineral cited by Kasatkin et al. (2022) associated with gurzhiite:
"Gurzhiite associates directly, and is sometimes intimately intergrown with, khademite. Other associated minerals include quartz and an unidentified fluoride of Al, most likely a F-analogue or a variety of nordstrandite $\text{Al}(\text{OH})_2\text{F}$."



Kasatkin, A.V., Plášil, J., Chukanov, N.V., Škoda, R., Nestola, F., Agakhanov, A.A., Belakovskiy, D.I. (2022): Gurzhiite, $\text{Al}(\text{UO}_2)(\text{SO}_4)_2 \cdot 10\text{H}_2\text{O}$, a new uranyl sulfate mineral with chain structure from Bykogorskoe deposit, Northern Caucasus, Russia. *Mineralogical Magazine*, 86(3), 412-421

Those who **NO** made the following comments:

Those who voted **ABSTAINED** made the following comments:

COMMENTS ON THE NAME:

Those who voted **YES** made the following comments:

Those who **NO** made the following comments:

Those who voted **ABSTAINED** made the following comments:
